

Exemption No. 10206

**UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98057-3356**

In the matter of the petition of

Voyageur Airways Limited

for exemption from § 25.981(a)(3) of Title 14, Code
of Federal Regulations

Regulatory Docket No. FAA-2010-1050

DENIAL OF EXEMPTION

By letter dated October 8, 2010, Mr. Jeff Cooke, Vice President – Maintenance and Engineering, Voyageur Airways Limited, 1500 Airport Road, North Bay, Ontario, Canada, P1B 8G2, petitioned for exemption from Title 14, Code of Federal Regulations (14 CFR), 25.981(a)(3), as amended by Amendment 25-125. The proposed exemption, if granted, would permit relief from the requirements for fuel-tank-ignition protection of auxiliary fuel systems on Bombardier Model DHC-8 100/200/300 series airplanes.

The petitioner requests relief from the following regulations:

Section 25.981(a)(3), at Amendment 25-125, requires that:

- (a) No ignition source may be present at each point in the fuel tank or fuel tank system where catastrophic failure could occur due to ignition of fuel or vapors. This must be shown by:
- (3) Demonstrating that an ignition source could not result from each single failure, from each single failure in combination with each latent failure condition not shown to be extremely remote, and from all combinations of failures not shown to be extremely improbable. The effects of manufacturing variability, aging, wear, corrosion, and likely damage must be considered.

The petitioner supports its request with the following information:

This section quotes the relevant information from the petitioner's request. Due to the proprietary content of the petition, the complete petition is available from Voyageur Airways Limited. The following text is available at the Department of Transportation's Federal Docket Management System, on the Internet at <http://regulations.gov>, in Docket No. FAA-2010-1050.

Voyageur Airways Limited (North Bay, Canada) is her[e]by petitioning for an exemption to CFR Part 25, Sec. 25.981(a)(3), Amdt. 25-125 with respect to an auxiliary fuel system installation developed for the Bombardier DHC-8 100/200/300 Series aircraft. This system is identical to that once provided by Bombardier (the aircraft Type Certificate Holder) as a standard option; through agreements with Bombardier, Voyageur Airways Limited is now offering services to modify aircraft to include the auxiliary fuel system. It is the intent to approve the installation through a Federal Aviation [Administration] Supplemental Type Certificate.

The auxiliary fuel system follows the same design philosophies as those used for the aircraft main fuel system. In addition, both the main and auxiliary fuel systems meet the requirements of Special Federal Aviation Regulation No. 88 (Fuel Tank System Fault Tolerance Evaluation Requirements), which provides increased safety measures, identification of Critical Design Configuration Control Limitations (CDCCLs), and the introduction of Fuel System Limitation inspection tasks (FSLs). For these reasons, granting this exemption would not adversely affect safety.

Voyageur Airways Limited seeks limited relief from CFR Part 25, Sec. 25.981(a)(3), Amdt. 25-125 since it is impractical to meet the prescribed requirements. FAA Memorandum ANM-112-08-002 acknowledges that meeting the standards of 25.981(a)(3) is impractical for some areas of structural lightning protection design, and outlines the requirements to apply for an exemption to this rule. The enclosed [proprietary] report (ER 09-0001C) provides an analysis of the auxiliary fuel system and describes the features that do, and those that do not, meet the intent of CFR Part 25, Sec. 25.981(a)(3), Amdt. 25-125. As required by the FAA Memorandum, the report shows that the design includes at least two independent, effective, and reliable lightning-protection features.

It is in the public interest to grant this exemption as it would provide aircraft operators with better flexibility in terms of route planning. Aircraft equipped with the auxiliary fuel system have extended range, which may result in fewer refueling stops and reduced aircraft cycles. These factors would result in lower operational costs which may be passed on to the public as a whole.

Federal Register publication

A summary of this petition was published in the Federal Register on December 22, 2010 (75 FR 245). No comments were received.

The FAA's analysis


The FAA has reviewed the information provided by Voyageur Airways Limited and has concluded that granting this exemption is not in the public interest for the reasons described here.

The petition seeks an exemption, for systems portions of the design, from the ignition-prevention requirements of § 25.981(a)(3). To support that request, the petition and its supporting analysis cite the criteria in FAA Memorandum ANM-112-08-002. That Memorandum, however, defines criteria that the FAA considers in granting exemptions to the fuel tank structure. The Memorandum notes that the “relief ... provided by this policy is limited to areas of fuel tank structure ...” Since the petition requests an exemption relative to systems portions of the design, it does not provide adequate support for granting the exemption.

The FAA's decision

In consideration of the foregoing, I find that a grant of exemption is not in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. §§ 40113 and 44701, delegated to me by the Administrator, Voyageur Airways Limited is hereby denied an exemption from § 25.981(a)(3), to permit relief from the requirements for fuel-tank-ignition protection of auxiliary fuel systems on Bombardier Model DHC-8 100/200/300 series airplanes.

Issued in Renton, Washington, on **FEB 9 2011**



Jeffrey Duven
Acting Manager, Transport Airplane Directorate
Aircraft Certification Service